NATIONAL ENERGY SECURITY STRATEGY

2015

GOBIERNO DE ESPAÑA

PRESIDENCIA DEL GOBIERNO

NATIONAL ENERGY SECURITY

STRATEGY

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DSN

Energy is a basic component of the prosperity, economic growth and wellbeing of society, as well as of the sovereignty and continuity of the State. Without energy, neither development nor progress is possible.

Safeguarding national energy interests is an absolute priority for this Government, because only if we protect our present and future energy heritage will we be in a position to defend and look after the rest of our vital interests. We will thus build a fairer, more prosperous society and contribute to shaping a more sustainable world. Energy security therefore plays a central role in the public space of National Security.

This is acknowledged by the National Security Strategy adopted by this Government in 2013, the provisions of which are developed by the Energy Security Strategy in order to guide State action with an anticipatory vision and the greatest political consensus possible, on the basis of our country's particular energy situation.

Spain has an energy profile of its own. It is a consumer country dependent on external resources with a limited level of energy interconnection, but it is also a country with a complete energy mix that is diversified as to geographical origin and primary sources.

Furthermore, our country's geographical location provides us with two major opportunities in particular: on the one hand, the ability to connect Europe with the Atlantic basin; and, on the other, the key role we can play as a potential energy hub for the arrival and diversified distribution of energy resources to the European Union.

Only within this regional integration framework – the European Union – can national energy security be decided and designed.

When defining a long-term energy strategy it is essential to adopt a very broad perspective of the sector's future. Various factors must be assessed and quantified, such as technological advances in the known means of generating and distributing energy. Or, likewise, energy interdependence and the influence of power shifts on the availability of resources. Or, lastly, the influence of the energy market's regulatory framework on the competence, competitiveness and innovation of enterprises.

In this regard, it is a priority for Spain to progress towards an Energy Union and promote an effective and integrated internal market. The European Union faces the challenge of looking to the Mediterranean to overcome its dependency, and our position as an energy bridge is a key. It is necessary to carry on promoting interconnections between Member States. A fully interconnected European network is essential to achieving an Energy Union and, ultimately, an energy that is secure, sustainable and affordable to citizens.

THE PRIME MINISTER

Anticipation is even more essential in an interdependent and multipolar world that is constantly changing – a world that faces global challenges such as environmental sustainability, to which it can only respond effectively with joint and shared solutions.

Furthermore, only with a basic and responsible conception of Energy Security will it be possible to progressively build a genuine State Policy in this field. This consensus must bring together citizens' representatives and actively involve society. Spain must educate people about energy. Because a society that is well informed and aware of the importance of energy to wellbeing is a country's best asset for preserving its energy security.

It was necessary to carry out a wide-ranging exercise, examining all possibilities, on Spain's energy security and its citizens. And this is what we have done, involving all the ministerial departments with responsibilities in this area, incorporating the sector's vision of security, and listening to experts. The result is this Strategy.

We view national energy security as a State action aimed at guaranteeing energy supply in an economically and environmentally sustainable manner through external resources but also, and increasingly so, by generating indigenous sources in the framework of the commitments we have made and acting in solidarity. Challenges, risks and threats of various kinds can undermine the guarantee of energy supply. This Strategy identifies them and lays down guidelines for mitigating them through anticipation, prevention and response.

We had the responsibility of taking a different approach to energy security, one that was comprehensive and in accordance with our new needs and future challenges. The Government has the firm will to involve Spanish society, which is advanced, in this project.

Prime Minister
Mariano Rajoy Brey

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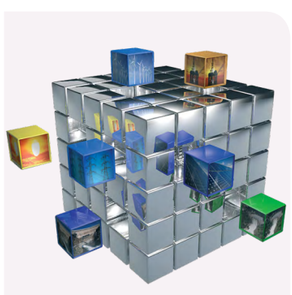
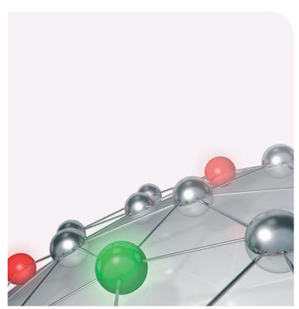




EXECUTIVE SUMMARY

The National Energy Security Strategy provides a conception of energy security that is underpinned by a broad and comprehensive vision and based on the precepts enshrined in the 2013 National Security Strategy.

Identifying interdependence parameters on the global scene as its point of departure, the National Energy Security Strategy defines Spain's energy profile in the framework of our status as a European Union Member State. After listing the challenges to energy security, the Strategy sets forth provisions for achieving nine objectives, for which a series of strategic lines of action are established. Finally, it examines energy security as part of the organisational structure of the National Security System and provides for the possible creation of a Specialised Energy Security Committee as a support body of the National Security Council, which is headed by the Prime Minister.

The National Energy Security Strategy is divided into five chapters. The first chapter situates Spain within the global energy landscape. The North American countries' new producer status, our special ties with Latin America, and the Gulf of Guinea states' direct access to the Atlantic Ocean, coupled with our own privileged

geographical location, afford Spain great potential for becoming an energy hub for Europe. The shift in the world centre of gravity towards the Asia-Pacific region, the Middle East's permanent role of production centre for hydrocarbons and the significance of Russia on the international energy scene make for a highly dynamic equation and a constantly changing landscape that provides opportunities from which our country can emerge strengthened and also serious challenges that entail risks and threats to our strategic interests.

Spain's energy security can only be understood in the framework of the European Union and in consonance with its particular energy profile, which is characterised by dependence, diversification and other assets that underpin our country's energy potential.

The second chapter defines the concept of national energy security on the basis of Spain's energy situation. The Strategy lays down wide-ranging, comprehensive guidelines for a conception of national energy security with reference to four vectors: supply, delivery, economic sustainability and environmental sustainability. These four energy dimensions are closely interrelated and there are also cross-cutting aspects such as technological innovation, energy efficiency and the external action of the State.

The third chapter describes the main challenges to national energy security. An analysis of the world situation and its implications for national energy security leads us to identify five challenges: climate change, rising demand, the energy market equation and volatility, effective management of reserves and the energy security culture. These trends must be properly quantified as they can increase our degree of energy vulnerability.

A comprehensive approach provides us with a solid basis for determining the main risks and threats of our energy situation. Accordingly, insufficient investments in infrastructure and fraudulent activities in the energy sector are risks and threats that are looming on the economic horizon. Factors that are identified in the geostrategic field are political instability in producer countries, optimising the diversification of energy resources, threats to supply routes and political conflicts between supplier, consumer and transit countries. From a technical viewpoint, insufficient energy interconnections, insufficient infrastructure maintenance actions, threats stemming from nuclear electric power generation and serious industrial accidents are emerging as risks to our energy security. There is also an environmental component in this broad survey of risks and threats, which takes into account environmental disasters. Lastly, deliberate actions, both physical and

in cyberspace, complete the map of risks and threats.

Guided by the overarching energy security objective laid down in the National Security Strategy – diversify energy sources, ensure the security of transport and supply and boost energy sustainability – the fourth chapter lists nine partial objectives and related strategic lines of action. The first of them aligns State action in energy matters with the European Union. The next three objectives – diversify the mix, ensure a secure supply and foster indigenous sources – are designed to reduce our energy vulnerability and enhance Spain's strengths. Our country's commitment to a sustainable economic development model and respect for the environment make up the fifth objective, together with measures for fostering economic sustainability and energy efficiency, on the understanding that these two key factors, environment and economy, are closely related in energy matters. The security of infrastructure, in both the physical and cyber dimensions, together with the security of transport routes, traces a line that is both physical and virtual, and whose protection ensures the continuity of the energy supply to the end user. Lastly, fostering a national energy security culture, the ninth objective of the National Energy Security Strategy, entails raising society's awareness as a key to understanding the significance of this area in the normal functioning of everyday life and of the economy in general.

The fifth and last chapter of the National Energy Security Strategy incorporates energy security into the National Security System in order to implement strategic planning and integrate the established energy security objectives through an organisational structure in which the Government administration, the private sector and society as a whole take part.

This structure, headed by the Prime Minister with the assistance of the National Security Council as the Government Executive Committee for National Security, already has specialised committees in maritime security (National Maritime Security Council), cybersecurity (National Cybersecurity Council) and immigration (Specialised Immigration Security) as support bodies in the related areas, and the Specialised Situation Committee, a body exclusively for managing crises at the politico-strategic level.

The National Energy Security Strategy provides for the possible creation of a Specialised Energy Security Committee which, with the same integrating and multidisciplinary spirit that has guided the existing bodies, has joined the project begun in 2013 with the publication of the National Security Strategy – a project that is growing thanks to the effort shared by everyone.

The National Security Department of the Cabinet of the Prime Minister's Office, established as the permanent working body of the National Security Council to provide politico-strategic advice to the Prime Minister on National Security matters, has a Situation Centre for crisis management and would perform the function of supporting the Specialised Energy Security Committee.

CHAPTER 1

AN INTERDEPENDENT ENERGY ENVIRONMENT UNDER TRANSITION

Spain must have a flexible and diversified energy system based on a suitable infrastructure in order to ensure that its energy supply is of sufficient quality and, in addition, environmentally and economically sustainable.

This system must correspond to our energy profile, which is defined chiefly by two variables. On the one hand, Spain is a consumer country dependent on external resources. On the other hand, its supply is extremely diversified, not only with respect to energy sources – a fact which makes our so-called energy mix very complete – but also as to the origin of the resources we import.

Spain's energy situation requires a comprehensive vision of the realities and trends of the energy scene, as well as of the interdependence of energy markets in a complex world in which far-reaching technological and geopolitical changes

are taking place. Furthermore, only with cooperation and solidarity is it possible to address global challenges which affect us in this area, such as climate change.

Spain's main sphere of reference in this context is the European Union. Progress towards European integration reinforces the defence of Spain's interests and this is also true of the energy field, where our country can gain a very significant position by promoting the establishment of the Energy Union.

This chapter of the National Energy Security Strategy identifies our interdependence parameters in the global environment, focusing on Spain's regional sphere of reference, the European Union.

THE GLOBAL GEOPOLITICAL ENERGY SCENE: CHANGES AND TRENDS

For years the global energy scene has been undergoing constant, highly significant changes that condition interdependence relationships in the supply markets and have a real or potential impact on national energy security. A country like Spain, which is largely dependent on the global markets for its energy supply, needs an anticipatory and comprehensive vision of these motors of change.

In North America the new unconventional hydrocarbon extraction methods, although not yet providing energy self-sufficiency, are already greatly diminishing dependence on external energy sources. In addition, they could condition the geographical diversification of other countries or regional blocs such as the European Union.

The European Union imports a very significant proportion of the energy it consumes. Its dependence on hydrocarbons is high and is greater in States with a low level of diversification or interconnection.

Africa produces approximately double the energy it consumes, though there is a very high level of inequality between the various regions of the continent in terms of energy demand and supply. In general, the African continent is notable for its limited domestic transport connectivity and high dependence on foreign investment and technology.

Increased energy consumption is directly related to world population growth and the economic development of the emerging economies, chiefly in Asia.

The exploitation and extraction of natural resources is not expected to change

in reaction to this increase in consumption, as it will continue to be concentrated in a small number of producer countries. However, changes are expected in the volume of energy flows between the various regions of the world.

Energy security in the coming years, chiefly in countries that import hydrocarbons, must be based on interdependence and a diversification of trends.

Access to energy is influenced decisively by technological innovation, which allows better use of resources and a new capacity to discover and exploit indigenous energy sources. Furthermore, innovation is not only technological but equally applicable to production processes and methods that make it possible to increase energy efficiency.

In addition, the commercial and geopolitical dynamics of the new energy market are becoming a factor of vital importance in the international power balance and clearly influence National Security.

The Atlantic basin

In the United States and Canada the development of new drilling, fracturing and extraction techniques has made it possible to exploit formerly inaccessible oil and natural gas reserves in shale formations and bituminous sands. The entry into the energy market of unconventional hydrocarbons produced in the United States and Canada could afford European countries a diversified source of resources from a more stable and reliable supplier.

Furthermore, the availability of energy resources in Latin America is huge and diversified in oil, natural gas, hydraulic energy and biomass. The region exports energy sources, but the distribution of this energy wealth is very unequal and concentrated in a very small number of countries. Exploitation of these resources requires significant national and foreign investment to boost the development of a technological capacity in particular.

One-third of all the oil and coal we import comes from Latin America. Spain has traditionally maintained deep-rooted, mutually beneficial relations with Latin America that allow us to lower our risk profile by diversifying our supply from these countries, which enjoy significant degrees of stability.

In addition, this understanding fosters our national industry's access to possible new lines of business derived from these countries' opening up to the international markets or access to new sources of production or procedures for accessing deep-water energy reserves.

Of Africa's four major hydrocarbon producers – Algeria, Libya, Nigeria and Angola – the last two are located in the Atlantic basin. Having a coastline is a strategic factor of primary importance that allows commodities and hydrocarbons from the Gulf of Guinea to arrive via shipping routes that do not run through narrow passages.

Spain can play a very significant role in achieving an internal energy market in the European Union owing to its Atlantic focus and coastline and can become an essential asset for boosting European and, consequently, national energy security. In particular, it can be a point of entry into Europe for natural gas, provided that interconnections are developed between the Iberian Peninsula and the rest of the continent and an appropriate regulatory framework is developed in parallel.

The Asia-Pacific region

The Asia-Pacific region lies at the centre of world geopolitical and economic realignment, and has a high growth forecast owing chiefly to its population increase, the

rise of the middle classes and the development of its economies. In view of this significant increase in domestic energy demand, guaranteeing continued access and availability of energy resources is a central national security concern of the region's most developed countries.

Higher energy consumption increases these countries' need to be firmly involved in combating climate change, which is a major global concern. The real and potential consumption rates of countries such as India or China, together with those of other emerging and traditional consumer countries, highlight the importance of global responsibility for the good governance of energy resources.

North Africa and the Middle East

The Middle East is the world's largest hydrocarbon reserve – a status that entails the ability to influence prices in international oil

markets by varying the volume of supply. In addition, the political instability of this region, together with phenomena such as radicalisation and international terrorism, can affect supplies to consumer countries. Despite the fall in North American demand, it appears that the growing demand forecasts of the Asian powers will afford the market stability in the medium-to-long term.

North Africa is our main supplier of natural gas. The area's geographical proximity ensures it a key role in our energy supply, and fostering its stabilisation is therefore a priority, even though Spain has a diversified global hydrocarbon supply matrix.

Europe

The European Union imports more than half of the energy it consumes. The diversification programmes adopted and the entry into the market of unconventional hydrocarbons will reduce its energy vulnerability.

In the field of electricity, lack of interconnection is the reason for the existence of real energy islands. Attempts are being made to alleviate this situation by significantly increasing interconnection capabilities to allow the single energy market to develop and by harnessing the potential of renewable energies – indigenous energy sources that have major possibilities but need to be backed up by alternative conventional sources owing to the difficulty of managing them and their intermittent nature.

Finally, there is considerable uncertainty in the field of nuclear energy owing chiefly to its lack of social acceptance stemming from the risks associated with its use.

Following a decade as one of the leading world exporters of hydrocarbons and a key energy supplier to Western Europe, the situation of Russia, which uses energy as a foreign-policy tool, is being jeopardised by Russian companies' failure to adapt to European regulations and changes in the European security environment. The most important aspect of Russia's energy strategy in the coming years could be its pivot to the Asian markets. A factor of particular importance in this context is the European Union's geographical diversification, in which Spain's opening up to the Mediterranean may prove essential.

The Arctic

Owing to the thawing caused by climate change – which in itself is a matter of utmost importance – the hitherto largely unexplored Arctic region is arousing growing international strategic interest on account of its large potential wealth of natural resources and the opening of new transit routes and shipping lanes that could shorten the voyages of merchant vessels by connecting the Pacific with the Atlantic.

Hydrocarbon exploration and exploitation activities on dry land have been a reality for several decades, whereas those relating to seabed energy resources are less developed as access to the latter is more difficult. Addressing the challenge of climate change jointly and guaranteeing the region's sustainable development are unavoidable priorities.

TOWARDS THE ENERGY UNION

The European Energy Security Strategy promotes closer cooperation for the benefit of all Member States, respecting national energy preferences and based on the principle of solidarity.

It emphasises as basic pillars: moderating energy demand; building a well-functioning and fully integrated internal market; increasing energy production in the European Union; further developing energy technologies; diversifying external supplies and related infrastructure; and strengthening emergency/solidarity mechanisms including coordination of risk assessments.

Achieving the Energy Union is a priority that is based on energy security, solidarity and confidence, and is ultimately aimed at guaranteeing secure, affordable, diversified and sustainable energy. It is an essential instrument for strengthening the competitiveness of the European industry and, accordingly, laying the foundations for growth and job creation in the European Union.

In the framework of the European Energy Union, the establishment of a genuine internal energy market is a key factor for enhancing energy security.

This single internal energy market must be viewed in two dimensions. On the one hand, there is the physical dimension which, based on the regional energy infrastructure that connects Europe with the outside world through electricity grids and a network of oil and gas pipelines, should propose and

facilitate the better development of internal energy connections between EU Member States and ensure flexibility of supply and resilience.

On the other, there is a component of regulatory convergence in order to guarantee legal certainty and transparency, thereby facilitating competitiveness and efficiency.

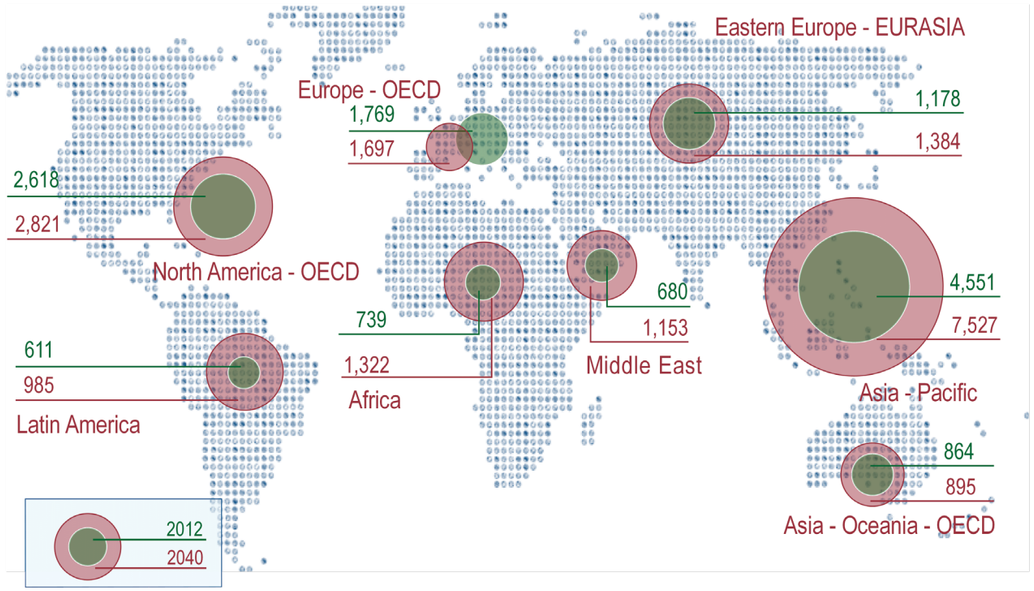
The European Union's strategic priority consists, in particular, in guaranteeing an affordable and sustainable supply. Spain's energy security is part of that of the European Union, which shares the pattern of dependency on third countries.

The European Union has incorporated climate change policy and energy policy into the so-called 2020 Climate and Energy Package, which includes emission reduction, renewable energies, and energy efficiency targets. It establishes a twenty-percent reduction in the emission of greenhouse gases by 2020 with respect to 1990 emissions, as well as a twenty-percent increase in energy efficiency and consumption of renewable energies in the European Union.

In addition, the 2030 framework for European Union climate policies and the roadmap 2050 should be regarded as examples of the Union's firm commitment to sustainability and energy competitiveness.

Spain embraces these obligations with national targets that commit us to achieve twenty percent of renewable energies in our total energy consumption by 2020; to reduce greenhouse gas emissions in non-EU ETS sectors by ten percent with respect to 2005, as well as to reduce the emissions of installations subject to the ETS in order to contribute to reducing emissions in the European Union as a whole by twenty-one percent with respect to 2006; and to improve energy efficiency.

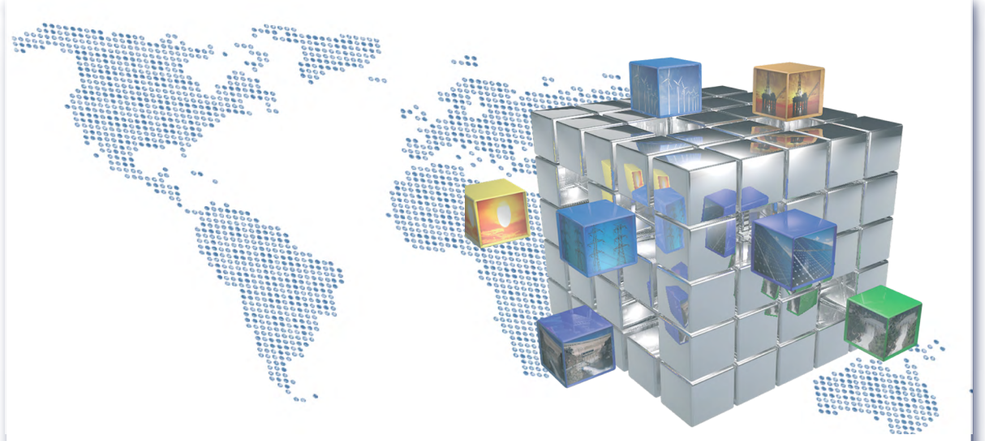
In short, energy efficiency and renewable energies are two key pillars for achieving greater mitigation of emissions in the atmosphere.



Mtoe (Million Tonnes of Oil Equivalent)

Compiled by the Departement of National Security with information from the International Energy Agency

Increase in the demand for primary energy in the world (Mtoe)



CHAPTER 2

A COMPREHENSIVE VISION OF NATIONAL ENERGY SECURITY

National energy security depends on very diverse factors that must be considered in the short, medium and long term. In any event, it must be viewed comprehensively owing not only to the dynamics and global challenges described above but also to the areas and actors it involves.

This chapter outlines Spain's present and future energy profile, always from the perspective of appropriate management of interdependence, and accordingly offers a comprehensive concept of national energy security that is adapted to our particular characteristics and designed to orient State action.

Finally, it sets out the main factors that underpin each of the vectors or components of national energy security, which is based on supply, provision and economic and environmental sustainability.

OUR OWN CONCEPT OF ENERGY SECURITY

Spain's energy profile is that of a consumer country dependent on external resources. Added to this is its status of 'energy island', which stems from its limited interconnection to the European Union. In the future we will face many challenges in order to maintain our level of wellbeing in an environment in which the effects of climate change will be more palpable.

The electrical system

- Its main characteristics are its robustness and strength, as it consists of a mesh network and a diversified generation mix with a significant increase in renewable energies.
- It underpins most of society's strategic sectors.
- There are two electrical systems in Spain. The non-peninsular system, made up of those of the Balearic and Canary Islands, and of the Autonomous Cities of Ceuta and Melilla, which are isolated and form energy islands. The peninsular system is notable for its stability and reliability.
- Strengthening interconnections with the European system is a priority for boosting its flexibility.

The Spanish energy system is based on three major sectors: electricity, natural gas and oil. They each have unique characteristics – particularly with respect to transport, storage, distribution and sale – and their own regulatory framework.

Supplying electrical energy is a service of general economic interest on account of society's progressive electrification due to the use of electrical power for various new purposes, such as transport. The Spanish electrical system is characterised by its robustness and strength, as it consists of a mesh network that is partially interconnected with France and Portugal. The electricity generation mix is diversified and notable for the significant increase in production from renewable energy sources.

In contrast contrary, the Spanish gas and oil sectors are characterised by their almost complete dependence on other countries. Natural gas is a fundamental part of primary energy supply in Spain and, as an economic activity of general interest, it contributes to the generation of electricity and heating, is a source of energy and commodities for industry and, to a lesser extent, is used as a fuel for transport.

Oil is our country's main primary energy source. Domestic production is very small, and Spain's oil system therefore depends on other countries. The principal means of

The gas system

- Dependent on other countries for supply.
- The existence of strategic reserves and the diversification of supply sources help ensure continuity in the service.
- Interconnected with Portugal, France, Morocco and Algeria. Strengthening interconnections will afford the European gas system greater stability

supply is maritime transport.

This profile of an isolated import-dependent nation is offset by various assets. The first is the availability of a geographically diversified energy mix.

Equally significant are Spain's Mediterranean nature and possibility of becoming the point of entry for energy flows from the Atlantic basin – an aspect that would result in the appropriate mitigation and management of political challenges.

Another notable aspect is its diversified energy sources: in addition to the two dominant primary energy sources – oil and gas – in its mix, nuclear energy, coal and renewable energies also make up Spain's energy generation profile.

Other aspects make our country a potential energy hub for the arrival and diversified distribution of energy resources, as well as for the exportation and introduction of technology to other markets. It should be stressed in this connection that Spain's excellent regasification infrastructure, consisting of seven plants, and the existing gas pipelines afford the system a high degree of flexibility.

Added to this is Spain's high refinement capacity, which allows a large number of processed products to be obtained from crude oil for use and sale. Further factors that differentiate Spain's energy system are the modern and resilient structure of the distribution grid and the growing contribution of renewable energies to electricity generation. The latter factor

Energy security

- Responsibility of the Government, which involves the Public Administrations.
- Requires private collaboration and the active and responsible involvement of society in general.
- Contributes essentially to raising both individual and collective awareness of the need for responsible and efficient consumption of energy resources.

is leading to a correlative decrease in dependence on external suppliers and proper compliance with environmental commitments to reduce greenhouse gases, and is an incentive to the development of the national industrial sector.

An appropriate level of investment – a key to providing infrastructure maintenance and implementing research and development programmes – is needed to develop a suitable level of interconnections and bring the energy infrastructure into line with future requirements. The necessary investments in the energy sector must ensure affordable energy prices that guarantee not only access under equal conditions but also the competitiveness of the industrial sector.

National energy security is viewed as a State action aimed at guaranteeing the availability of energy in an economically and environmentally sustainable manner, through external supplies and the generation of indigenous sources, within the framework of international commitments.

It is a Government responsibility which involves the Public Administrations and requires private collaboration, as well as the active and responsible involvement of society in general.

A well-informed society is a society in a better position to take part in the decisions that affect our energy security.

It is essential to be aware, both individually and collectively, of the possibilities of harnessing our resources, the responsible, rational and efficient use of energy sources, the environmental impact of energy consumption, and the prevailing sustainable protection of the environment and our intergenerational responsibility. All this will have a highly positive effect on our wellbeing, growth and development.

NATIONAL ENERGY SECURITY VECTORS

The vectors or components of national energy security are those involved in providing energy in a manner that is affordable to the end consumer, through external or own resources, and in accordance with prevailing national and international environmental guarantees in this field in extraction, transport and processing, or in the use of various energy products.

Each of the national energy security vectors – supply, delivery and economic and environmental sustainability – depends on various elements that must be addressed comprehensively, establishing a timeframe, in order to map our energy challenges.

In this regard, it is necessary to consider technological disruption. The business development of new technologies is a key factor in the energy field. This innovation allows better use of resources and a new capacity for discovering and exploiting indigenous energy sources.

Supply

It is essential to guarantee the end consumer's energy supply. Lack of continuity in the supply at any point in the global chain affects functions that are essential to society such as transport, trade and industry, security and defence.

Supply

- Viewed as the steady and good-quality provision of energy through distribution networks.
- Given the special importance of energy supply for the functioning of the economy, the State safeguards its security by establishing strategic reserves of oil and gas.
- Influenced chiefly by factors such as having a balanced energy generation mix; and appropriate maintenance and management of the transport, distribution and storage networks.

An appropriate supply is based chiefly on an energy mix that is diversified with respect to the type and location of energy sources and on the robustness of the transport, distribution and storage networks.

On the one hand, our country has a diversified electricity generation mix that combines many technologies. Our oil and natural gas dependence is thus appropriately offset by the use of indigenous sources in which, in addition to coal and nuclear energy, it has a significant production capacity from renewable sources such as wind, photovoltaic solar, thermoelectric, hydraulic and biomass energies. It is necessary to explore the possible availability of energy resources with a view to potentially increasing indigenous oil and gas production.

Furthermore, from a logistic point of view, Spain is notable for its robust energy infrastructure and appropriate national mesh network, which affords it great flexibility in addressing possible contingencies that could disrupt energy supply.

The pace of development of the various technologies in coming years, trends in fuel prices and the learning curve of certain technologies are factors that will determine the future generation mix.

Energy delivery

Given our dependence on third states for some resources, it is essential for energy to be delivered by both traditional supplier countries and emerging producers.

Energy delivery

- Given our dependence on third states, it is essential that we receive energy from supplier countries.
- The stability of both producer and transit countries is a crucial factor that requires appropriate geographical diversification in order to guarantee access to resources and ensure the greatest possible security during transportation.
- Spain's energy dependence requires dynamic and proactive external action targeted at both traditional and emerging markets.
- The use of indigenous energy sources, as well as helping reduce Spain's high energy dependence on other countries, helps diversify the energy mix.

Ensuring delivery depends on a number of variables such as the geographical diversification of the source of the energy supply, energy interconnection with third states, the strategic design of the State's external action, the security of the main points of entry for energy resources and the use of indigenous energy sources.

Spain is dependent on other countries for practically all the natural gas and oil it receives. However, one of Spain's main assets is its well-diversified mix of crude oil and natural gas suppliers, which include countries from North Africa – of particular geostrategic importance – as well as the Gulf of Guinea, the Middle East and the Americas.

However, several of the shipping routes that connect exporter countries with our coasts cross narrow passages known as choke points, which are characterised by their high density of maritime traffic that makes them areas at special risk of acts of piracy and terrorist attacks.

It is therefore important with respect to the management and storage of energy resources to ensure the maintenance of strategic hydrocarbon reserves in the event of conflict in the supply countries; Spain carries out these activities in accordance with the stipulations of the International Energy Agency. In other respects, the appropriate use of indigenous sources as a means of self-supply is helping offset Spain's dependence on other countries.

Furthermore, one of Spain's most important challenges is the Iberian Peninsula's insufficient level of energy interconnections with the rest of the European Union, which are well below the targets established by the European Union.

Economic sustainability (affordability)

Without energy, economic development is not possible. Energy and the economy are consubstantial. Access to modern energy services, at affordable and competitive prices and within a balanced regulatory framework, makes economic development possible, ensures a favourable environment for industrial development, and creates jobs and, in short, stability and security.

National energy security has an essential economic component, which is particularly significant in a globalised and highly competitive world.

Economic sustainability is influenced by variables such as price volatility in the international energy market, energy market competition and energy intensity.

As for the latter, despite the downward trend recorded in the past decade, Spain continues to display a high energy intensity level in comparison to some western countries. This, coupled with its high energy dependence on foreign countries, means that our country is significantly affected by the volatility of energy prices. The integration of European energy markets can be highly beneficial with respect to offsetting this impact.

Furthermore, the gas, oil and electricity energy markets need to develop in the framework of free competition rules that benefit enterprises and citizens.

Affordability

- Energy security has a clearly economic dimension as it entails ensuring affordable and acceptable energy prices.
- Developing measures for raising awareness of the need for a rational and efficient use of energy will help reduce Spain's degree of energy intensity.
- Chiefly influenced by factors such as energy intensity, market volatility and energy market competition.

Environmental sustainability

Spain's commitment to an energy development that is sustainable and respectful of the environment, helps reduce the carbon footprint and boosts all available technologies, in compliance with the established environmental requirements, is the basis for the third pillar of the conceptual framework of national energy security.

Environmental sustainability is influenced by various elements, notably the use of energies that contribute to compliance

Environmental sustainability

- Spain's commitment to an energy development that is sustainable and respectful of the environment is a core element of national energy security.
- The process of transforming the energy sector on a global level is indissolubly linked to technological development.
- The effects of climate change influence National Security. Fostering the use of available energy sources in which renewable technologies play a significant role.
- Chiefly influenced by the use of low-pollution energy sources, the fostering of R&D&I aimed at exploring improvements in the sector and the improvement of energy efficiency.

with the international standards in pollutant emissions and greenhouse gas targets. Spain's privileged physical and climate conditions allow it to use its hours of sunlight and wind to generate clean energy. Spain is an advanced country and an international point of reference in the development of renewable energies.

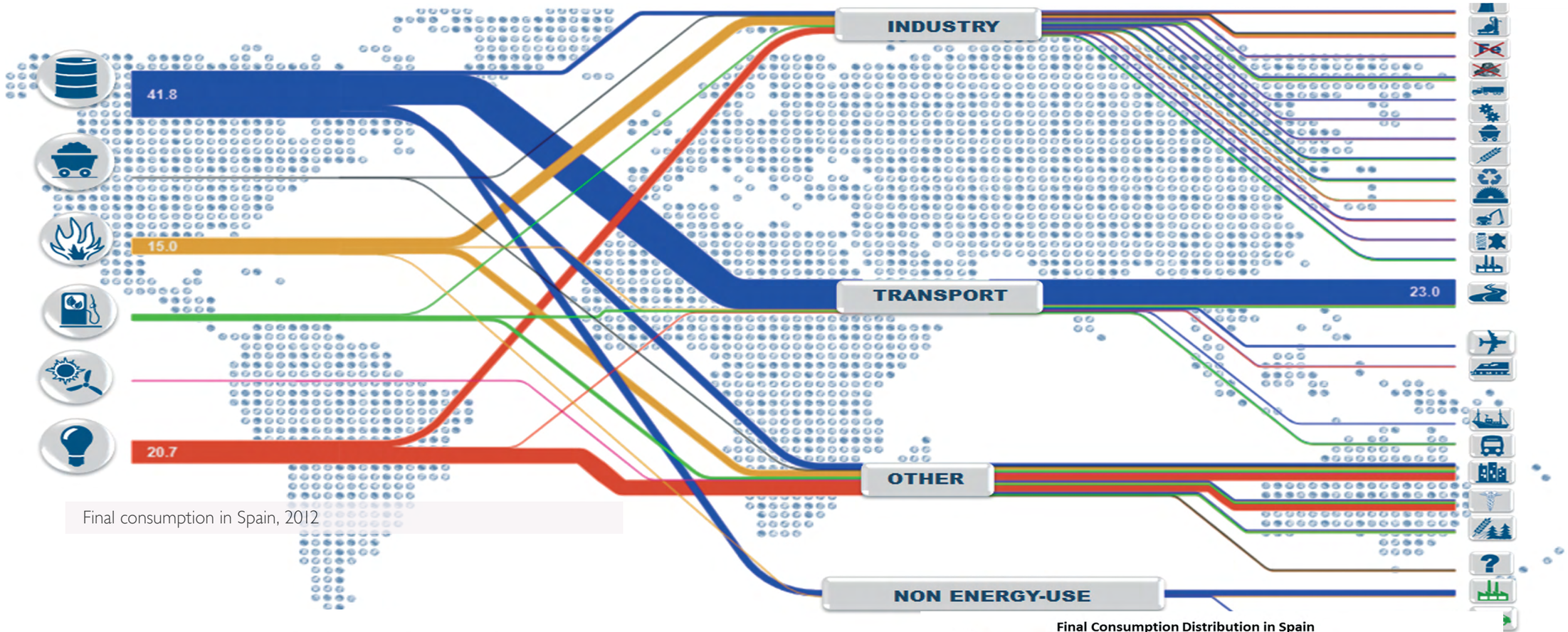
A key factor is likewise research, technological development and innovation (R&D&I) aimed at exploring improvements in the sector with this commitment to meet current energy needs without jeopardising those of future generations. This emphasis on R&D&I provides Spain with a strategic opportunity for boosting efficiency in the current processes of exploration and exploitation, maintaining an advantageous world position in the field of renewable energies and progressing in the pursuit and development of new indigenous sources that allow it to take advantage of its own resources.

Innovation is also relevant to energy efficiency in all sectors with a demand for energy, such as automobiles, housing and industry, and this is making possible significant reductions in energy intensity.

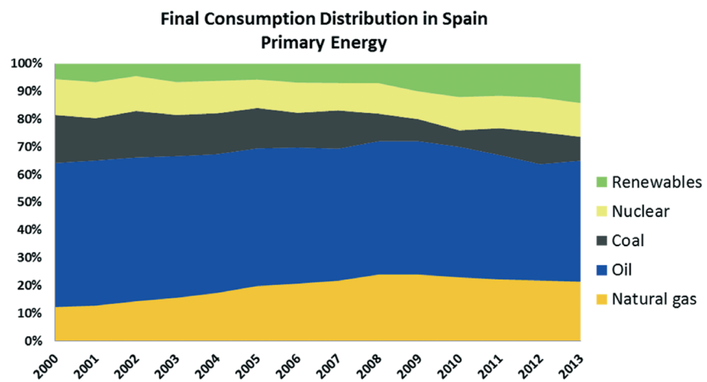
Energy efficiency requires a responsible use of resources. Many measures have been taken in Spain to save energy by reducing consumption in sectors such as housing, construction and transport, as well as to optimise the energy generation processes. In this regard, it is of utmost importance to make citizens aware that they play an active and necessary role in achieving a more efficient use of energy.

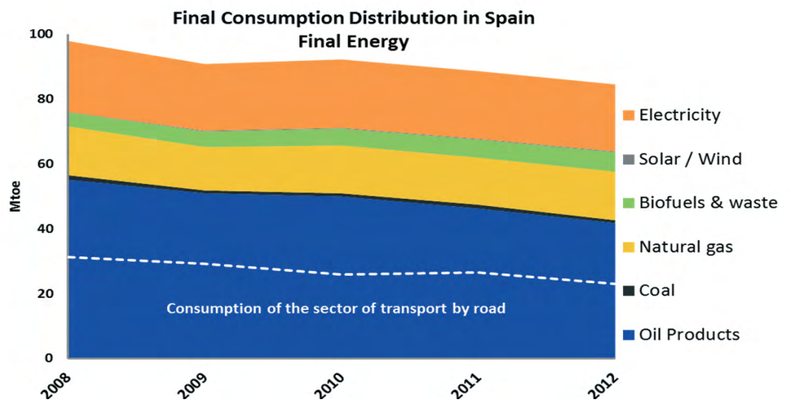
Spain: potential energetic hub for the arrival and distribution of energy

FINAL ENERGY CONSUMPTION IN SPAIN

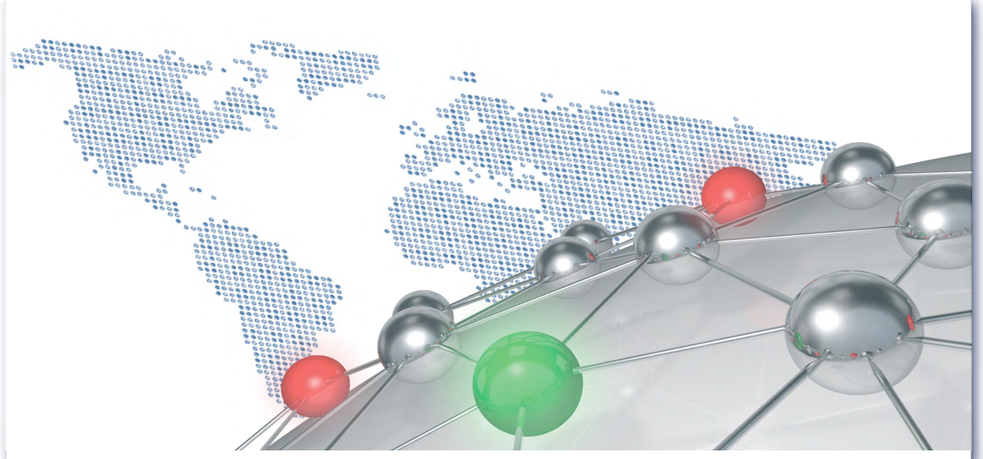


Final consumption in Spain, 2012





Compiled by the Department of National Security with information from the International Energy Agency



CHAPTER 3

NATIONAL ENERGY SECURITY CHALLENGES

National energy security may be jeopardised if environmentally and economically sustainable supply or delivery are affected. This can occur for various reasons.

Risks and threats to Spain's energy security are largely the same as those faced by nations that depend on external energy sources, especially in the European Union.

These can be classified by area of influence according to their global impact and must therefore be addressed jointly by the international community or exclusively nationally, it falling essentially to each State to manage them individually. Furthermore, they can be classified as environmental, economic, geostrategic, technical or deliberate depending on their origin or raison d'être.

A second approach draws a broader map and is viewed as the lynchpin of the risks

and threats faced in the field of national energy security.

Similarly, together with the risks and threats to which the constant flow of energy is subjected, there are other diverse threats that should be considered, duly assessing their importance over time, as they can generate new risks or threats or multiply and exacerbate the effects of already identified and known ones. These challenges are essentially dynamic.

This chapter identifies the main challenges, risks and threats that affect national energy security.

CHALLENGES

Climate change and environmental degradation

Emissions of greenhouse gases are causing global warming, which is having an impact on the climate, biodiversity, oceans and ice masses and, consequently, on the populations of the affected areas. Spain is a party to various international agreements on reducing greenhouse gas emissions. Two-thirds of all these emissions come from the energy sector and the figure is close to eighty percent in the case of Spain.

Initiatives such as establishing limit values for the emission of atmospheric pollutants and costs for carbon dioxide emission rights relate to the basic European Union principle that 'whoever pollutes pays'. In addition to bringing positive health and environmental effects, these initiatives lead to the internalisation of environmental costs, boost R&D&I and force the sector to make investments in implementing technologies that guarantee a high level of protection. Being informed of real energy costs would allow consumers to choose the most efficient means of production.

There is therefore an opportunity to build a new development model in which environmental sustainability underpins wellbeing and progress and fosters energy independence always from an economically efficient perspective.

Climate change could increase the instability of fragile States and even whole regions. North Africa and the Sahel are among the regions that are most vulnerable to the effects of a more extreme climate. Water shortage and increasing situations of drought are leading to soil degradation and the loss of arable land. In many countries large areas are being flooded by the rising sea level. These effects, coupled with many other tensions, can trigger conflicts with consequences for energy supply.

The United Nations Framework Convention regards improving energy efficiency in all sectors and the development of low-carbon energy sources as an important factor in combating global warming.

The energy sector is furthermore highly sensitive to the effects of climate change. Decreased rainfall, rising temperatures and changes in wind patterns may influence patterns in the demand for resources and affect the output of many power plants.

Exponential growth of international demand

One of today's major economic and political challenges is to ensure that the incorporation of China and India into the world economy and their access to energy resources does not spark a race between various States to control areas of production and supply flows, in order to prevent possible international friction and conflicts that could upset the world supply balance.

The International Energy Agency foresees a major increase in demand in the coming years owing to trends in globalisation, industrialisation and land development. Despite international efforts to develop renewable energies, the forecasts point to increased use of organic energy resources.

The energy market equation

The availability of energy resources is subject to market mechanisms which must guarantee the competence and, accordingly, competitiveness of Spain's industry and enterprises. The absence of a transparent market is detrimental to competitiveness and, ultimately, to security.

Regulatory convergence is a challenge that needs to be addressed in the European Union. The asymmetry between the various national energy models and business concentration can lead to a high level of inefficiency that can influence final energy prices.

Furthermore, the high volatility of oil prices causes major instability in real exchange rates, discouraging investment and leading to less growth in productivity.

The economic regulation of energy markets is therefore a factor that clearly influences energy security. In order to boost European and, accordingly, national energy security, there must be significant coordination between national and European Union energy policies. The adoption of an appropriate regulatory framework in the European Union is of utmost importance. The consideration of the energy sector as a strategic national sector is a factor that needs to be taken into account in this regulatory progress.

Managing reserves appropriately and effectively

The International Energy Agency was established in 1974, following the oil crisis, with the aim of coordinating its member states' policies in the event of disruptions in the supply of crude oil and petroleum products, both domestic and international.

Spain, like the rest of the European Union countries, has undertaken to maintain security stocks of oil products, and to take part in collective actions in the event of a supply crisis owing to its dual status as a member of the International Energy Agency and a European Union Member State.

Strategic reserves of hydrocarbons help ensure security of supply in the event of supply disruptions by maintaining the established levels of petroleum products, liquefied gases and natural gas. Responsibility for maintaining hydrocarbon stocks is shared by the public and private sectors.

Spain currently maintains strategic reserves in other countries, for which it signs bilateral agreements with them, taking advantage of its privileged geostrategic situation that grants it access to the main European markets.

In the event of supply crises, whether domestic or international, the Ministry of Industry, Energy and Tourism, through CORES [Spanish corporation of strategic reserves of petroleum products], helps ensure the continuity of supply by coordinating the release for consumption of the necessary stocks of petroleum products. For this purpose, it is essential to previously monitor the obligation to maintain strategic reserves, a responsibility which falls to the various private-sector agents.

Establishing and developing a wide-ranging energy security culture

Developing an energy security culture is one of the necessary foundations for reducing Spain's energy vulnerability and contributing to national energy security. An energy security culture is an essential part of our national security culture.

In particular, lack of acceptance, due to insufficient knowledge, of the establishment of the new infrastructure and technologies needed to ensure energy supply is a challenge for national energy security. Society's perception, whether spontaneous or induced, of certain technological developments or sources of generation can spark social opposition to the development

of new energy infrastructure, jeopardising the ability to meet future demand.

The population's stance largely depends on the degree of information it possesses on the specific implications of new technologies, and appropriate administrative and informative transparency is therefore necessary.

Generally speaking, in a modern and advanced society like Spain's, it is necessary to promote knowledge of the relationship between energy and development, energy vulnerability, increased energy independence, economic and environmental sustainability and, ultimately, how energy security contributes to National Security as a public good.

RISKS AND THREATS

Economic

- Insufficient upgrading and inappropriate investments in infrastructure

  Without an energy infrastructure network, supply cannot be guaranteed. It is necessary to maintain and upgrade it to ensure the appropriate subsequent development of interconnections, which will result in a more integrated market where energy is more secure, affordable, competitive and freely available.

  Furthermore, investments in different parts of the energy supply chain are crucial. It is necessary to keep up investment intensity owing to the long planning and execution times required by energy facilities before they come into service. Insufficient investment in the short term can lead to problems in meeting energy demand in the medium and long term.

- Fraudulent activities in the energy sector

  Tax fraud is a matter that can cause budgetary losses in Spain. Fraudulent activities are likewise likely to affect the competitiveness and functioning of the energy market.

  The carbon dioxide emissions market and the gas, electricity and motor fuels sectors are vulnerable to actions of this kind.

Geostrategic

- Political instability in producer countries

  Geopolitical instability in the main producing areas, owing either to domestic conflicts or to the presence of terrorist groups, endangers the supply of products, either directly in the transportation process or by pushing up hydrocarbon production and procurement costs, which may lead to an escalation of oil and gas prices with direct consequences for the international energy markets.

  This factor affects security of supply in Spain owing to the country's energy dependence with respect to hydrocarbons. It looks set to remain constant in the medium and long term in view of the growing complexity of the world energy landscape.

- Optimising the diversification of energy resources

  Diversifying the energy mix and reducing dependence on hydrocarbons are important factors in raising the national energy security threshold. Nevertheless, the International Energy Agency's forecast does not point to progress in this direction. It expects Spain to remain dependent on fossil fuels, with a significant increase in natural gas and a slight decrease in oil and coal.

- Threats to countries and supply routes

  Although some natural gas is not transported by gas pipelines but by ship in liquid form, the principal threats to fuel transport affect oil, which is mainly transported by sea from the producer countries, often through strategic passages such as the straits of Ormuz, Malacca and Bad el-Mandeb, as well as the Suez and Panama canals.

  In the case of Spain, the sea has a unique strategic value, as a very significant percentage of its imports and exports are seaborne. Maritime security is central to ensuring our energy supply, as we receive many gas and oil resources through this route. Maintaining freedom of navigation and guaranteeing the continual functioning of land infrastructure is of primary importance owing to their direct repercussions on economic and energy security.

- Political conflicts between supplier, consumer and transit countries

  The political and coercive use of energy exports, to which a few major energy exporters resort to satisfy their national interests, is emerging as a new threat to energy security as it amounts to a voluntary distortion of markets and constrains the freedom of action of the consumer countries largely dependent on their products.

  Negotiating bilateral agreements with

these countries within the European Union is likewise problematic, as the joint energy supply is at stake.

Technical

- Insufficient energy interconnections

  One of Spain's biggest energy problems is the insufficient level of energy interconnections between the Iberian Peninsula and the rest of the European Union. In order to mitigate our energy isolation and become fully integrated into the internal energy market, Spain considers it to be of vital importance to boost the gas and electrical interconnection capacity between the Iberian Peninsula and the rest of the European Union.

- Perceived risks of nuclear energy generation

  Nuclear electric power generation contributes to security of supply and to reducing the emission of greenhouse gases; however the serious nuclear accidents that have occurred outside Spain have helped raise the population's awareness of the risks associated with nuclear electric power generation, and have led decisions to be influenced by the huge media impact of these accidents. This is despite the advantage of energy independence its use provides.

- Serious industrial accidents

  The serious industrial accidents that can occur in certain energy infrastructure, owing to technical faults or human error, jeopardise national energy security because they seriously harm to both people and the environment, and because they affect the normal functioning of this infrastructure.

Environmental

- Natural disasters

  Adverse weather phenomena causing high temperature differences significantly increase energy consumption and can even lead to the total or partial disruption of supply. Adverse weather phenomena or natural disasters can also cause significant material damage to energy infrastructure, even jeopardising electricity supply.

Deliberate

- Cyber-threats

  Modern societies are characterised by their high connectivity which, despite its countless benefits, also entails greater exposure and vulnerability to cyber-incidents. Cyberspace is used by international terrorism, espionage networks and organised crime as a means of achieving their aims. We are rapidly moving towards a hyper-connected society, which requires a supplementary effort to maintain an appropriate security level in this environment.

  Our energy system is not unaffected by this phenomenon. Energy infrastructure is basically underpinned by Information and Communications Systems for its daily operation and is vulnerable to cyber-attacks. Such attacks can lead to loss of control over these systems or the issuance of erroneous messages during operation, which can in turn cause technical failures or accidents.

  Preventing and responding to cyber-attacks on critical infrastructure and essential energy services is one of the national security priorities of all the European Union countries.

- Physical threats to energy infrastructure

  One of the main challenges to energy security is deliberate actions aimed at destroying, disturbing and causing malfunctions to energy infrastructure through physical or logical attacks, thereby paralysing certain services that are essential to our community.

  Actions of this kind can be committed by various actors – individuals, terrorist groups, organised criminal groups or States – and can occur either at supply points in the countries that produce the commodities on which Spain is dependent or throughout the energy supply chain, specifically in electrical power generation and hydrocarbon refinery and storage infrastructure and during regasification. These sabotages are most likely to occur during the transportation of electricity, oil and gas throughout the extensive electrical power grid and network of oil and gas pipelines located across the country.

Objetives and Strategic Lines of Action

CHAPTER 4

OBJECTIVES AND STRATEGIC LINES OF ACTION

National energy security is a priority area of National Security. It should be considered a public good. Energy is what makes possible the normal functioning of our society. Without a reliable and competitive energy supply, economic and financial development is not possible. Energy security is essential to the country's prosperity, and should be the subject of a firm, ongoing State policy capable of reaching beyond timeframes and political agendas.

The National Security Strategy identifies diversifying energy sources, ensuring security of transport and supply, and promoting energy sustainability as an ultimate objective of national energy security. This overarching objective is made up of several partial objectives, whose achievement depends on the implementation of a series of lines of action. This chapter sets out nine partial objectives to which the related lines of action are linked.

OBJECTIVE 1. THE EUROPEAN ENVIRONMENT

Contribute to strengthening energy security in the European Union as a whole.

LINES OF STRATEGIC ACTION

A common European energy policy that ensures the functioning of the internal energy market and supply and fosters interconnections will strengthen the European Union's energy security and, consequently, national energy security. Spain must promote its national interests jointly.

- Foster the creation of a European energy market. A fully integrated European electricity and natural gas market is a guarantee of energy supply, security and quality. Connectivity reduces physical vulnerability, allows a flexible approach to possible supply disruptions and encourages intermodal competition between gas and electricity.
- Promote, together with our European Union partners, the development of a map of interconnections that allows a solution to be found to the problem of 'energy islands' in Europe.
- Support policies aimed at fully developing an effective internal energy market in the European Union.
- Support public policies aimed at achieving greater energy efficiency in the context of the European Union by fostering the moderation of energy demand, among other actions.
- Support the European Union's commitment to combating climate change, by promoting coordinated and ambitious energy policies in this field.
- Pay attention to the external dimension of the national and European Union energy policy, encouraging increasingly close coordination in these areas.

OBJECTIVE 2. DIVERSIFY THE ENERGY MIX

Ensure the diversification of the national energy mix, providing an appropriate representation of energy sources.

LINES OF STRATEGIC ACTION

It is necessary to take into account all energy sources in order to maintain a balanced mix that appropriately reflects all Spain's particularities and makes it possible to ensure supply at competitive prices based on a sustainable model in which greater importance is progressively given to clean energies.

- Foster the establishment of a balanced energy mix with the most appropriate participation of the available resources.
- Foster the use of indigenous energy sources.
- Maintain a harmonised, transparent and objective regulatory framework that boosts enterprises' legal certainty and competitiveness.

OBJECTIVE 3. SECURITY OF SUPPLY

Ensure security of supply in order to guarantee access to the necessary resources at all times.

LINES OF STRATEGIC ACTION

To avoid depending on a small number of producer countries for supply, it is necessary to establish a system that allows geographical diversification in the importation of energy products in order to reduce our energy vulnerabilities. It is important to strengthen our trade relations with alternative producer countries in order to minimise supply risks in the event of possible social or political crises in the supplier countries and develop relationships of interdependence with all of them.

- Increase supply flexibility in general and in particular by developing interconnections.
- Help reduce insular and extra-peninsular territories' energy vulnerability.
- Reduce vulnerability in supply through bilateral actions in markets of special interest, in emerging supply countries and in countries of transit.
- Protect energy supply from possible socio-political disturbances in producer and supplier countries.

OBJECTIVE 4. INDIGENOUS SOURCES

Foster the use of indigenous sources in order to diversify the energy mix and reduce our external dependence.

LINES OF STRATEGIC ACTION

Energy security is greatly enhanced by the use of indigenous energy sources. It is necessary to orient actions towards promoting a diversified energy system that shuns, as far as possible, the dependence entailed by importing conventional sources.

- Broaden energy sources beyond fossil fuels and nuclear energy by encouraging the use of all available indigenous energy sources, including renewables, always from a triple economic, financial and environmental viewpoint.
- Foster research and investment aimed at developing indigenous energy sources at competitive prices.
- Encourage the exploration and exploitation of hydrocarbon deposits and the design of feasibility plans for extracting these resources within the territory under environmentally appropriate conditions.

OBJECTIVE 5. ECONOMIC AND ENVIRONMENTAL SUSTAINABILITY

Enhance the economic and environmental sustainability of the energy system.

LINES OF STRATEGIC ACTION

In order to ensure an affordable energy supply and boost the competitiveness of the economic and business sector, it is necessary to consider the cost of energy production, both direct and associated with negative externalities.

The consumption of sufficient energy in an environmentally sustainable manner not only helps build a model of responsible economic development and an intergenerational legacy, but also optimises the use of resources to achieve energy efficiency. Efficiency is underpinned by innovation in technology and production processes, which is the driving force behind competitiveness. Measures related to the use of clean energies are thus closely linked to those that boost energy efficiency. Spain's commitment to the use of clean energies is in line with the European Union's Energy Strategy and international initiatives in this field.

- Respect economic sustainability in all activities of the energy sectors, preventing the development of factors that can destabilise them.
- Foster improvements in energy efficiency and energy saving.
- Develop technical tools for forecasting demand that make it possible to improve energy planning.
- Maintain an appropriate energy supply level while boosting the efficiency of transport and distribution networks.
- Foster the application of functioning and development technologies when their cost evolution makes them an economically feasible part of energy systems.

OBJECTIVE 6. INFRASTRUCTURE SECURITY AGAINST ACCIDENTS AND NATURAL DISASTERS

Promote the security of energy infrastructure against natural disasters or accidents stemming from technical failure or human error.

LINES OF STRATEGIC ACTION

The security of energy infrastructure against phenomena of technical or human origin is of particular significance in ensuring energy supply.

- Design protocols for crisis management and mobilisation of human and material resources in a coordinated manner between authorities and energy operators.
- Develop public-private collaboration in protecting energy infrastructure.
- Develop Contingency Plans to improve the system's resilience.
- Foster a closer relationship between generation and consumption to avoid risks associated with transport.

OBJECTIVE 7. INFRASTRUCTURE SECURITY AGAINST DELIBERATE THREATS: CYBER-THREATS AND PHYSICAL THREATS

Boost the overall security of energy sector infrastructure, particularly that which is considered critical, against physical and cyber-threats that can seriously endanger them.

LINES OF STRATEGIC ACTION

To ensure the normal functioning of the energy system, the infrastructure on which this system is based must be protected. Comprehensive security plans and measures must be designed for this type of infrastructure to ensure it is properly protected against physical and cyber-threats that can seriously jeopardise not only the facilities but also their physical and information technology networks, systems and equipment.

Energy operators of critical infrastructure must bring their security policies into line with the regulations on Critical Infrastructure Protection and with the strategic action plans developed in this field for the energy sector in particular.

- Protect energy infrastructure, especially that which is considered critical, through a comprehensive security approach.
- Ensure the implementation of the regulations on Critical Infrastructure Protection in critical energy infrastructure in order to ensure its normal functioning.
- Encourage cooperation between the public and private sectors, promoting the exchange of information and intelligence on vulnerabilities and cyber-threats which can affect the energy sector, developing codes of conduct and good practice in the field of cybersecurity.
- Encourage and improve communication channels and procedures for incidents in the physical and cyber systems that allow operational government resources to be mobilised to guarantee or re-establish the continuity of energy supply.
- Boost the protection of sensitive information on energy infrastructure.
- Promote the cooperation of the energy industry sectors and cybersecurity services in order to jointly improve detection, prevention, response and recovery capabilities with respect to the security risks of cyberspace.
- Develop Contingency Plans to improve the resilience of the physical elements and Information and Communications Systems used by the energy sector, in order to ensure a continuous energy supply.

OBJECTIVE 8. TRANSPORT SECURITY

Ensure secure transport, both land and maritime, to achieve the timely provision of the necessary resources.

LINES OF STRATEGIC ACTION

Ensuring the security of the main routes through which energy resources enter our country, taking into account our high external dependence, is a strategic priority that needs to be developed – both the physical aspect, given the degree of risk and uncertainty of some of the geographical regions our supply routes cross, and the legal aspect – in order to establish a robust security system that facilitates energy supply.

The land and maritime transport network is an essential component of the energy system that requires detailed planning to ensure response and replacement at the national and European levels in the event of incidents in order to continue providing, or re-establish, the service within the shortest possible time.

- Boost the operational flexibility of the national system of energy transport networks. Review plans for channelling and prioritising demand in the event of supply disruption or shortage in coordination with the International Energy Agency and the European Union.
- Develop public-private collaboration to ensure supply in the event that critical infrastructure is affected.
- Reinforce control of communications, both maritime and ground, vis-à-vis any type of disruption of traffic.
- Improve the reliability of gas supply networks, the system for transporting and distributing oil, and the electricity system.
- Develop Contingency Plans to improve the system's resilience to possible disruptions in the transport networks.
- Reinforce measures designed to prevent fraudulent actions in the energy sector.
- Foster feasible and economically efficient alternatives for bringing generation closer to consumption, reducing transport as a vulnerable element.

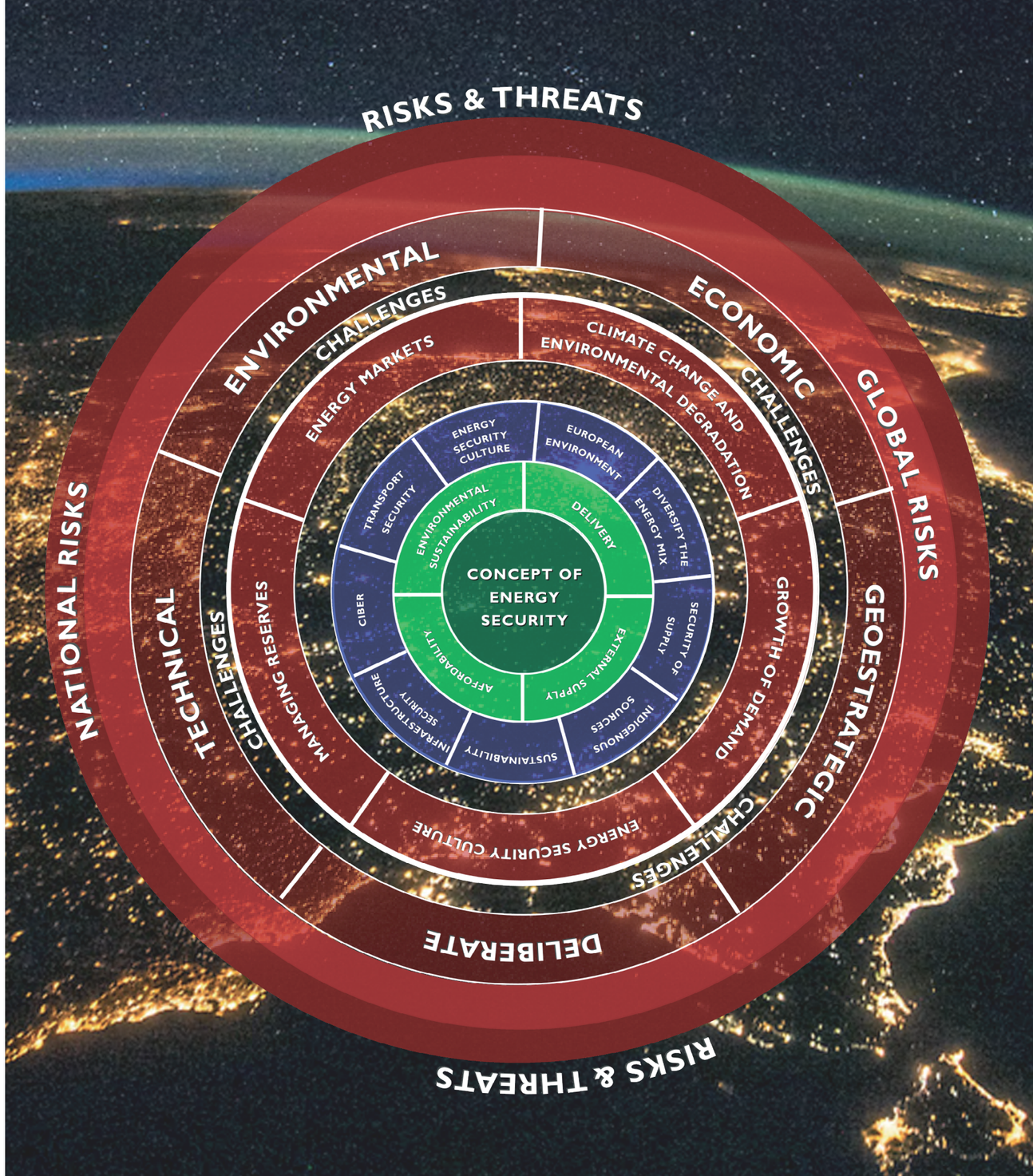
OBJECTIVE 9. ENERGY SECURITY CULTURE

Foster a national energy security culture among current and future generations by raising awareness of its importance.

LINES OF STRATEGIC ACTION

In order to appropriately raise society's awareness of the importance of energy security for the normal functioning of everyday life, aspects such as dissemination or incorporating plans that address the energy dimension into our education system are measures that will benefit areas such as energy efficiency or environmental sustainability.

- Promote an energy security culture that enhances national, individual and collective awareness of energy vulnerability and the need to foster the efficiency of our energy system through measures such as moderating energy demand.
- Convey to society the importance of adopting a culture of responsible consumption of final energy products.
- Promote the notions of environmental impact, energy sources, sustainable resource management, energy sovereignty and responsible energy consumption through the basic syllabus of primary education and compulsory and higher secondary education.
- Promote knowledge of environmental impact, energy sources, sustainable resource management, energy sovereignty, the importance of energy resources and their diversification and responsible energy consumption, among other notions, in the general education system.



CHAPTER 5

ENERGY SECURITY IN THE NATIONAL SECURITY SYSTEM

INTRODUCTION

The National Security System provides the necessary guidelines for optimising and enhancing energy security through the interaction of the four pillars on which the Spanish energy sector rests: energy policy, which is the responsibility of the Government; the actions of enterprises mainly active in the energy sector; the involvement of agencies that supervise the functioning of the energy market; and society represented by its citizens, who are subsequent end consumers of energy sources that are characterised by their accessibility, sustainability and efficiency.

Including energy security in the National Security System facilitates the short-, medium- and long-term planning of the actions necessary for its preservation, taking as an overarching guideline the objectives established in the Government's

energy policy. At the same time, the System facilitates strategic analysis from a comprehensive approach in view of the risks and threats detected, as well as compliance with the objectives and lines of action set out in the present sectorial Strategy, intensifying the degree of coordination between all sector actors and ensuring expeditious and effective action in the event of crises.

The National Security System is designed so as to be constantly prepared to provide the Prime Minister and the Executive as a whole with the necessary bases for judgement in making decisions on protecting National Security and, from this perspective, energy security.

The National Security System is headed by the Prime Minister, who is assisted by the National Security Council. The Department of National Security acts as a Technical Secretariat and permanent working body of the National Security Council and its support bodies, as well as performing other legally and statutorily assigned functions. The support bodies of the Council perform functions assigned to them by the Council itself in the areas of action identified in the National Security Strategy, or when required by crisis management circumstances, through the actions entrusted by the Council to the Specialised Situation Committee.

SUPPORT AND COORDINATION BODIES

Specialised Energy Security Committee

In compliance with its mission to assist the Prime Minister in directing and coordinating the National Security Policy, the National Security Council will assess the need and advisability of establishing a support body in the area of energy security.

This body will be given the name of Specialised Energy Security Committee or whatever name is decided by the Council.

Its functions will include fostering coordination, collaboration and cooperation between the various Public Administrations with responsibilities in the area of energy security, and between the public and private sectors. In this regard it will encourage the participation of civil society when the latter can make a significant contribution to building a national energy security culture. It will likewise facilitate the Council's decision-making by analysing, studying and proposing both national and international initiatives.

The composition of the support body will reflect the spectrum of the ministerial departments, public organisations and other bodies of the Public Administrations with responsibilities in the energy field, in

order to coordinate actions that must be addressed jointly so as to raise security levels. Other significant private-sector actors and specialists deemed to make a significant contribution may also take part in it.

In performing its functions, the support body will in turn be supported by the Department of National Security as Technical Secretariat and permanent working body of the National Security Council.

Crisis-management and coordination support bodies

The National Security Council leads and coordinates crisis-management actions.

For this purpose, the Council is assisted by the Specialised Situation Committee unique to the National Security System, whose functions include formulating strategic political guidelines for crisis management, as laid down in its specific regulations.

The support body of the National Security Council in energy security matters and the Specialised Situation Committee will complement one other, each acting in its own area of responsibility but under the same strategic and political guidance of the National Security Council chaired by the Prime Minister.

The Specialised Situation Committee will be supported by the Situation Centre of the Department of National Security in order to guarantee interconnection with the operational centres involved and provide an appropriate response to crisis situations, facilitating their monitoring and control and the transmission of decisions.

To ensure the effective performance of its functions of supporting the Specialised Situation Committee, mechanisms will be set in motion for liaising and coordinating with the bodies of the related Public Administrations and representatives of the private sector as deemed appropriate in view of the nature of the crisis situation under consideration, in accordance with the specific regulations applicable.

Organisational structure of the national energy security

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